

App. No. 10/820,535
Amendment Dated September 29, 2005
Reply to Office Action of June 29, 2005

REMARKS/ARGUMENTS

Claims 1-20 are pending in this application. Claims 1-10 and 19 stand rejected. Claims 1, 8, and 15 have been amended to clarify the term "dual diode system" and are supported by the discussion starting on page 5, line 20. No new matter has been added. In view of the preceding amendments and following remarks, reconsideration and allowance of all pending claims are respectfully requested.

Claim Rejections under 35 U.S.C. § 102(e)

The Office Action dated July 29th, 2005 rejected claims 1, 3, 6, 8, 10, 13, 15, 17, and 20 under 35 USC 102 (e) as being unpatentable over U.S. Patent Application Publication No. 2004/0001527 ("Grannes"). Regarding claim 1, Grannes fails to teach or suggest a dual diode system that is formed on a first substrate and that has a first terminal that is coupled to a first electrode of a first junction diode, wherein the first electrode of the first junction diode has a first polarity, a second terminal that is coupled to a first electrode of a second junction diode, wherein the first electrode of the second junction diode has the first polarity, and a third terminal that is coupled to second electrodes of the first and second junction diodes, wherein the second electrodes of the first and second junction diodes have a second polarity that is opposite of the first polarity.

Instead Grannes discloses three dual diodes consisting of dual diodes that are cross-coupled, such as dual diodes 101 and 102, dual diodes 103 and 104, and dual diodes 105 and 106. As such each dual diode system fails have two anodes (for example) that are coupled to a

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first and second terminal, and two cathodes that are coupled to a third terminal. Grannes clearly teaches that the disclosed circuit (see Abstract) is for sensing temperatures at multiple locations on a substrate. As such each pair of dual diodes is located at different locations on the substrate so that the temperatures can be sensed at multiple locations. Because each pair of dual diodes is located at different locations on the substrate, various diodes from different dual diodes cannot be construed to form a dual diode system that is collocated.

This distinction is significant because the claimed dual diode system is configured to permit dual-ended temperature measurements (as well as single-ended measurements), where the dual-ended temperature measurements permit high-accuracy measurements. As discussed starting at page 5, line 20, the PN junctions should be at the same temperature for accurate measurements. If the diodes are not collocated, as in Grannes, the temperature measurements become inaccurate very quickly with greater distances because temperatures vary widely over substrates as a function of circuitry operation.

Independent claims 8, 15, and 21 are similar to claim 1, albeit different in important ways and are submitted to be allowable for at least the reasons by which claim 1 is allowable. Dependent claims are submitted to be allowable for at least the reasons by which the claims from which they depend are allowable.

Claim Rejections under 35 U.S.C. § 103(a)

The Office Action dated July 29th, 2005 rejected claims 2, 9, and 16 under 35 USC 103 (a) as being unpatentable over Grannes in view of US 5195827 ("Audy"). The Office Action also rejected claims 4-5, 11-12, and 18-19 under 35 USC 103 (a) as being unpatentable

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over Grannes. Claims 1-2 4, 7-9, 11 13-16, 18, and 20 were also rejected under 35 USC 103 (a) as being unpatentable over US 5982221 (Tuthill) in view of US6612738 (Beer).

Regarding claims 4-5, 11-12, and 18-19, Grannes fails to teach or suggest a dual diode system having a bias circuit that is formed on the first substrate. The Office Action cited In re Japikse for the proposition that changing the location of the bias circuit from the second substrate to a location on the first substrate, absent any criticality, is considered an obvious modification of Grannes' apparatus. Applicants assert that the option of "pinning out" of the terminal is a criticality because it can be used to save package pins in some chip/package configurations. (See discussion starting at page 3, line 19.)

The Office Action also asserts that it would be obvious that the sensing circuit would have direct control over the application of the currents that bias the desired terminals as already suggested by Grannes. Applicants traverse the rejection because the temperature measurement circuit is on the second substrate, and not the first substrate. Applicants believe the request is based upon hindsight reasoning and seasonably requests the Examiner to provide a motivation based in the references.

Regarding claims 1-2 4, 7-9, 11 13-16, 18, and 20, Tuthill in view of Beer fails to disclose a temperature measurement circuit that is formed on a second substrate. The Office Action asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the temperature measurement circuit on a second substrate in order to provide more available space on the first substrate and making the second substrate usable for testing a plurality of first substrates at different times. Applicants believe that the motivation is

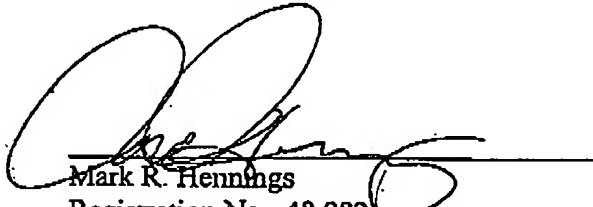
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too general because it contemplates any invention that saves space and using a second substrate for measurements. Dependent claims are submitted to be allowable for at least the reasons by which the claims from which they depend are allowable.

In view of the foregoing amendments and remarks, all pending claims are believed to be allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the undersigned attorney for the applicant at the telephone number provided below.

Respectfully submitted,

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